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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,028	09/15/2003	Samuel H. Reichgott	SDC-103US	2564
23122	7590	12/26/2006	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			LU, JIA	
			ART UNIT	PAPER NUMBER
			2611	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/26/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/663,028	REICHGOTT ET AL.
	Examiner Jia W. Lu	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 01 September 1503.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,2,4,5,8,9,12,14 and 16-25 is/are rejected.  
 7) Claim(s) 3,6,7,10,11,13 and 15 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 15 September 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                        |                                                                   |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                            | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 1, 2, 14, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634, in view of US patent 6807227.
- a. Regarding claim 1, '634 describes a method for controlling a directional antenna to receive a radio frequency signal (paragraph 0003) comprising the steps of providing multiple direction signals to the directional antenna to receive the RF signal from multiple corresponding directions (figure 9, elements 909), determining information concerning signals received from

each of the multiple directions (figure 9, element 924), analyze the determined information (figure 9, elements 960, 963) to select a preferred direction from which to receive the RF signal (element 966) and sending a direction control signal to the antenna to receive the RF signal from the preferred direction (element 972). While '634 does not disclose determining its signal to noise information (paragraph 0046) concerning respective frequency spectra of the received signal, such a feature is well known in the art, as shown by '227 (column 10, lines 30-35). It would have been obvious to one ordinarily skilled in the art to obtain signal to noise information concerning respective frequency spectra in order to generate more accurate analysis and better account for interference.

- b. Claim 2 reads on the limitations of claim 1 above, further, '634 describes analyzing information concerning respective signal strengths (paragraph 0010).
- c. Regarding claim 14, '634 describes the metric information to account for an interference degradation (paragraph 0012).
- d. Claim 21 reads on the limitations of claim 1 above, further, '634 describes a direction antenna (see abstract).
- e. Claim 22 reads on the limitations of claim 2 above.

2. Claims 4, 5, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634 and US patent 6807227,

further in view of US patent 6690723.

a. Regarding claims 4, 5, '634 describes calculating a metric applied to the received signals from respective ones of the multiple corresponding directions, however, it does not describe the metrics to be for a MMSE DFE. '723 shows the use of MMSE DFE to calculate values to be computed in a metric. Because MMSE DFE is well known in the art to calculate and reduce interference of received signals without increasing complexity of the system, it would have been obvious to one ordinarily skilled in the art to incorporate MMSE DFE in calculating a metric in '634 for the purpose of better determine relative signal quality.

b. Claims 23 and 24 read on the limitations of claims 4, 5 above.

3. Claims 8, 9, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634 and US patent 6807227, further in view of US patent application publication 2003/0095508.

a. Regarding claims 8, 9, '634 describes calculating a metric applied to the received signals from respective ones of the multiple corresponding directions, however, it does not describe the metrics to be for a MMSE linear equalizer. '508 shows the use of MMSE linear equalizer to calculate values to be computed in a metric. Because MMSE linear equalizer is well

known in the art to calculate and reduce interference of received signals especially at high transmission rates, it would have been obvious to one ordinarily skilled in the art to incorporate MMSE-LE in calculating a metric in '634 for the purpose of better determine relative signal quality.

- b. Claim 25 reads on the limitations of claims 8, 9 above.
4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634 and US patent 6807227, further in view of US patent 6,466,912. While '634 describes calculating a metric applied to the received signals from respective ones of the multiple corresponding directions, it does not describe the metrics to include a respective spectral flatness measure. Such a feature is well known in the art in noise detection, as shown in '912 (column 1, lines 35-44). It would have been obvious to one ordinarily skilled in the art to include spectral flatness measure into the metrics for determining signal quality in order to provide better noise predictability.
5. Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634 and US patent 6807227, in view of US patent application publication 20020165002.
  - a. Claim 16 reads on the limitations of claim 1 above, however, it does not disclose measuring a first and a second characteristic. '002 discloses measuring a first and a second characteristic that is different from the first

characteristic in pointing an antenna (paragraph 0042). It would have been obvious to one ordinarily skilled in the art to accomplish the antenna pointing of '634 using a first and a second step in order to increasing overall antenna scanning speed while reducing overall power used.

- b. Regarding claim 17, '002 describes the first and second characteristic to be different metrics (paragraph 0042).
  - c. Regarding claim 19, '002 describes the two-step positioning of the antenna, and it inherently follows that the controller for the antenna sends the antenna multiple signals in order to achieve multiple-step positioning.
  - d. Regarding claim 20, while '002 does not describe the directions to include north, south, east, west, and a second direction to include directions in between north, south, east and west, such a feature is of design choice and it would have been obvious to one ordinarily skilled in the art to include these as preliminary directions as they are well known directions that occupy the entire space (office notice taken).
6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent application publication 2004/0053634 and US patent 6807227, in view of US patent application publication 20020165002, further in view of US patent application publication 2003/0095508. This claim inherits the limitations of claims 16, 4 and 5 above.

***Allowable Subject Matter***

7. Claims 3, 6, 7, 10, 11, 13, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042. The examiner can normally be reached on Mon- Fri, 8:30AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/663,028  
Art Unit: 2611

Page 8

Jia Lu  
Examiner



**JAY K. PATEL  
SUPERVISORY PATENT EXAMINER**